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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/441,124	11/17/1999	HIDEAKI ONO	FUSA16.745	3879

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KATTEN MUCHIN ZAVIS ROSENMAN
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER

HOM, SHICK C

ART UNIT PAPER NUMBER

2666

DATE MAILED: 02/20/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/441,124

Applicant(s)

ONO ET AL.

Examiner

Shick C Hom

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11/17/99, 1/22/01, 11/27/02.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 22-24 is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4, 5. 6) ☐ Other: _____

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DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: in page 2 line 8 delete the word "will" and insert ---with---.

Appropriate correction is required.

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

3. Claims 1, 2, 4-6, 9-11, 15, 16, and 18-24 are objected to because of the following informalities: in claims 1, 15, 18 line 4, claims 6 and 11 line 3, claim 19 line 6-7, claim 21 line 3, the words "a short packet" seem to refer back to "a short-packet" recite in claim 1 line 2, claim 15 line 2, claim 18 line 2, claim 21 line 1, respectively. If this is true, it is suggested changing "a short packet" to ---the short-packet---. In claim 2 line 6, claims 4 and 10 line 4, claim 15 line 20,

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claim 18 line 21, the words "an ATM switch" seem to refer back to "an ATM switch" recited in claim 1 line 16, claim 15 line 15, claim 18 line 17, respectively. If this is true, it is suggested changing "an ATM switch" to ---the ATM switch---. In claim 2 line 7, claim 15 line 22, claim 18 line 26, claim 22 line 9, claim 23 line 9, the words "a length" seem to refer back to "a length" recited in claim 1 line 5, claim 15 lines 4-5, claim 18 line 5, claim 22 line 3, claim 23 lines 2-3, respectively. If this is true, it is suggested changing "a length" to ---the length---. In claim 2 line 9, claim 15 line 24, claim 18 line 27, claim 20 line 18, claim 21 lines 3 and 18-19, the words "an AAL" seem to refer back to "an AAL" recited in claim 1 line 2, claim 15 lines 2-3, claim 18 lines 2-3, claim 20 line 4, claim 21 line 2, respectively. If this is true, it is suggested changing "an AAL" to ---the AAL---. In claims 4 and 9 line 3, the words "first" seems to refer back to "first" recited in claim 1 lines 7-8. If this is true, it is suggested changing "first" to ---the first---. In claims 5 and 10 line 4, the words "cell" seems to refer back to "cell" recited in claim 4 line 7. If this is true, it is suggested changing "cell" to ---the cell---. In claim 16 lines 3 and 4, claim 22 lines 16-17 and 19, claim 23 lines 16-17, 18, 22, and 27-28, and claim 24 line 3, the

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words "a first" and "a second" seem to refer back to "a first" and "a second" recited in claim 15 lines 7-8 and claims 22 and 23 line 6, respectively. If this is true, it is suggested changing "a first" and "a second" to ---the first--- and ---the second---, respectively. In claims 22 and 23 line 6, delete parenthesis around "a first-half cell and a second-half cell." In claim 24 line 8, the words "a line" seems to refer back to "a line" recited in claim 23 line 11. If this is true, it is suggested changing "a line" to ---the line---. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. Claims 1, 5, 10, 11, 18, and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 5 and 10 line 2, which recite "significant data" is not clear as to whether it is reciting ---the significant data--- of claim 1 lines 9-10 or ---the remaining significant data--- of line 12. In claims 5 and 10-11 line 3 which recite "an ATM cell" is not clear as to whether it is reciting ---the

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ATM cell--- of claim 1 line 6, or ---the first ATM cell---, or --
-the second ATM cell--- of lines 7-8. In claim 18 line 15 which
recite "the cell" is not clear as to whether it is reciting ---
the ATM cell--- of claim 18 line 6, or ---the first ATM cell---,
or ---the second ATM cell--- of lines 7-8. In claim 1 line 6
which recite "capable of being accommodated in one ATM cell" and
lines 13-14 which recite "could not be accommodated in the first
ATM cell" is not clear as to what is capable and what could not
be accommodated in one ATM cell.

Claims 2-4, 6-9, 12-14 and 19 are rejected under 35
U.S.C. 112, second paragraph because they depend from rejected
claims 1 and 18, respectively.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms
the basis for all obviousness rejections set forth in this Office
action:

(a) A patent may not be obtained though the invention is not identically
disclosed or described as set forth in section 102 of this title, if the
differences between the subject matter sought to be patented and the
prior art are such that the subject matter as a whole would have been
obvious at the time the invention was made to a person having ordinary
skill in the art to which said subject matter pertains. Patentability
shall not be negatived by the manner in which the invention was made.
This application currently names joint inventors. In

considering patentability of the claims under 35 U.S.C. 103(a),

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the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103[®] and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lyons et al. in view of Baldwin et al.

Lyons et al. disclose nearly all the subject matter now claimed. Note col. 6 lines 8-19 which recite the ATM processor filling payload of ATM cells with AAL-2 packets; forming an ATM cell whenever the payload is filled-up or a timer expires with at least one AAL-2 packet in the payload; ATM cell header processing; placing ATM cells into a transmit buffer, etc., providing ATM cells to ATM network, receiving ATM cells from ATM network, providing ATM cell header processing and error control; and transferring AAL2 packets to AAL2/SSCS processing unit, clearly

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
anticipate the cell processing apparatus as in claims 1, 15, 18, 20. Further, col. 3 line 62 to col. 4 line 2 which recite the use of the length indicator for indicating the length of the packet being added to each packet so that the end of variable length packets can be demarcated whereby when the value of the LI field points beyond the end of the current ATM cell, the packet is split between cells; and FIG. 1 which shows the ATM cells and AAL-2 formatting whereby the packet is split between two ATM cells clearly anticipate a cell processing apparatus for switching packet in AAL type 2 cell format including means for splitting the packet having a length greater than L bytes capable of being accommodated in one ATM cell into the first and second ATM cells and cell creation means accommodating the packet length information in a payload area of the first ATM cell and remaining data not accommodated in the first ATM cell in the payload area of the second ATM cell as in claims 1, 15, 18, 20, 21. Col. 2 lines 40-67 which recite ATM networks carry fixed size cells within the network irrespective of the applications being carried over ATM; however for larger application packets, a segmentation and reassembly (SAR) layer allows segmentation of a `packet` at the transmitter, so each segment fits into an ATM cell, and reassembly of the original packet from the received ATM cells at

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the receiver clearly anticipate the amount of significant data accommodated in the first ATM cell being a predetermined amount and accommodating the remaining in the second ATM cell as in claim 3. Col. 4 lines 3-12 which recite the HEC field providing error detection over the packet header whereby packets are discarded whose headers are corrupted clearly anticipate the restoration means detecting absence or presence of cell discard upon comparing calculated error code with received error correction code and detecting bit error in data as in claim 14.

[Col. 6 line 59 to col. 7 line 12 which recite using sequence numbering during play-out whereby packets are played out of the receive buffer in conjunction with the most recent sequence number at associated time intervals, wherein although packet 2 was lost and packet 3 was already received before the play-out time of packet 2, a fill packet is played-out in place of packet 2 at time interval 2 so that the packets are not "slipped backward" and packet 7, which is already in the buffer, but recognized to have arrived late is discarded and col. 7 lines 41-42 which discarding packets currently existing in the buffer (3, 0', 1' and 2'), and playing out packet 3' in its correct position, for restoring the order in the play-out process clearly anticipate restoration means detecting absence or presence of

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cell discard upon referring to the sequence-number information of the received ATM cell as in claim 4, upon referring to the code information of the received ATM cell as in claims 9, 19, and discarding the preserved significant data if cell discard is detected as in claims 5, 10.  Fig. 3 which shows the sequence number field and col. 4 lines 13-40 which recite the portion of the RES field providing application specific function whereby a different instance of being provided to each AAL-2 user including packet sequence number clearly anticipate the specific area being an area within the payload of the ATM cell as in claims 6, 11, an unused area within the ATM cell header as in claims 7, 12, and unused area within the packet header of each cell as in claims 8, 13. Fig. 1 which shows the packet header in cell 50 and col. 3 lines 46-50 which recite the packet header comprising a Length Indicator (LI) field clearly anticipate the length information as in claims 1, 15, 18, 20, 21 and the length information of the first ATM cell being a specific value, e.g. 0, and the length information of the second ATM cell being that of the packet as in claims 16 and 17.

Lyons et al. did not recite the short packet and the ATM switch as in claims 1, 15, 18, 20, 21, and the restoration means for extracting short packet portions accommodated in the ATM

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cells upon referring to the length information as in claims 2, 15, 18, 20, 21.

Baldwin et al. teach that it is known to use the ATM switch to transfer the extracted short packets to another ATM cell as set forth at col. 12 lines 26-35 in the field of digital and multiplex communications for the purpose of improving bandwidth efficiency by using fewer but more efficient ATM connections to carry logical link connections LLCs among multiple end points which clearly anticipate the short packet and the ATM switch as in claim 1 and the restoration means for extracting short packet portions accommodated in the ATM cells upon referring to the length information as in claim 2. Further, col. 12 lines 26-38 recite the ATM switch extracts short packets as a function of a length indicator associated with the short packet.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide the short packet and the ATM switch and the restoration means for extracting short packet portions accommodated in the ATM cells upon referring to the length information as taught by Baldwin et al. to the system of Lyons et al. because Baldwin et al. teach the desirable advantage of improving bandwidth efficiency by using fewer but more efficient ATM connections to carry logical

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link connections LLCs among multiple end points and said improved bandwidth efficiency being desirable to achieve more efficient system operation in Lyons et al.

Allowable Subject Matter

7. Claims 22-24 are allowed.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Brueckheimer et al. disclose a communications system.

Ono et al. disclose a short-cell multiplexing device.

9. **Any response to this nonfinal action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

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Hand-delivered responses should be brought to Crystal
Park II, 2121 Crystal Drive, Arlington. VA., Sixth
Floor (2600 Receptionist at (703) 305-4750).

Any inquiry concerning this communication or earlier
communications from the examiner should be directed to Shick Hom
whose telephone number is (703) 305-4742. The examiner's regular
work schedule is Monday to Friday from 8:00 am to 5:30 pm EST and
out of office on alternate Friday.

If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, Seema Rao, can be
reached at (703) 308-5463.

Any inquiry of a general nature or relating to the status of
this application or proceeding should be directed to the
Technology Center 2600 Customer Service Office whose telephone
number is (703) 306-0377.

SH



February 15, 2003